Item #X
June 20, 2011
Energy Commission Business Meeting

AIR PRODUCTS AND CHEMICALS, INC.

Grant Agreement ARV-10-048
for
Low-Cost Hydrogen Refueling Station Deployment Program

Summary

This project was one of three projects (totaling 11 hydrogen fueling stations) selected under PON-09-608, Hydrogen Fueling Infrastructure, which provided $15.7 million in funding for new or upgraded hydrogen fueling stations for light-duty fuel cell vehicles.

Air Products and Chemicals, Inc. (Air Products) will construct six new hydrogen fueling stations at existing gasoline retail stations and upgrade two existing hydrogen fueling stations in Southern California. At full capacity, each station will be able to provide approximately 180 kilograms per day (enough for approximately 180 vehicles per day). This project will also support the deployment of new, proprietary hydrogen delivery trailers, and the construction of a central hydrogen filling system to fill the trailers.

Based on surveys of automakers, more than 1,200 fuel cell vehicles are expected to be deployed in the greater Los Angeles region by 2014. However, the lack of available hydrogen fueling infrastructure is a major hurdle in facilitating the deployment of fuel cell vehicles. This is due in part to the high station cost, as well as the relatively large footprint of hydrogen fueling stations.

The hydrogen fueling network concept developed by Air Products offers an opportunity to resolve these issues. Air Products' network will reduce the cost of individual hydrogen stations to less than $1 million, using equipment that can be easily incorporated into existing gasoline retail stations or used to upgrade existing fueling stations. The fuel supply for these stations will be produced at Air Products' central facility in Wilmington, California, and distributed via Air Products' new delivery trailer technology.

The Energy Commission will provide $11,231,733 in Alternative and Renewable Fuel and Vehicle Transportation Program funds, and Air Products will provide match funding of $ 4,671,851.

Benefits

This project, along with other hydrogen fueling stations in the greater Los Angeles region, will provide a basis for automakers to accelerate their deployment of fuel cell vehicles in the region. These vehicles produce zero tailpipe emissions (other than water) and, when using fuel from the West Los Angeles station, will reduce lifecycle greenhouse gas emissions by 44 percent compared to a conventional gasoline vehicle. Based on estimated vehicle throughput through 2020, the Air Products network of hydrogen fueling stations will reduce greenhouse gas emissions by 25,000 metric tons, and displace of 10 million gallons of gasoline. Additionally, one-third of the hydrogen from Air Products central facility will be produced from renewable feedstocks.

The Air Products fueling network will also have important economic benefits to the state. The delivery trailers utilize storage vessels designed and manufactured by Structural Composite Industries (SCI), based out of Pomona. This order will assist SCI in maintaining 20 existing jobs and adding 12 new jobs (SCI will build the delivery trailers). In addition to the SCI jobs, the upgrades to the central fill system will require short-term engineering, procurement, and construction work. The completed facility will require the permanent hiring of three filling terminal operators, plus two to four drivers for the delivery trailers. It is estimated that the entire project will create approximately 21 jobs in California and retain 20 existing jobs. The project is also expected to result in $500 thousand to $1 million in tax benefits to the state and local government.

Participants

Air Products is a global leader in hydrogen production, distribution and supply, with more than 50 years of experience in industrial gas. Air Products has extensive experience in the installation and upkeep of hydrogen fueling stations worldwide, including several projects in the greater Los Angeles region.

The fueling stations will be either located at an existing gasoline retail stations operated by SINA Green Fuel or Pearson Fuels, Inc. Two of the stations are upgrades to existing equipment not located at gasoline dispensing stations. SINA Green Fuel operates 13 stations providing alternative fuels, and is one of the alternative fuels providers within the state. Pearson Fuels operates 13 stations providing alternative fuels, and is a leading alternative fuels provider within the state.

Project Milestones

Station construction is expected to begin August 2011 and station completion is expected by February 2013.